

DESIGN AND DEVELOPMENT OF AN INTELLIGENT HEARING ABILITY LEVEL ASSESSMENT SYSTEM USING SOMATOSENSORY STIMULI

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by

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LIST OF ABBREVIATIONS

	AABR	Automated Auditory Brainstem Response
	AAEP	Automated Auditory Evoked Potential
	ABHS	Abnormal Hearing Subject
	ABR	Auditory Brainstem Response
	AEP	Auditory Evoked Potential
	AHG	Abnormal Hearing Group
	ANOVA	Analysis of Variance
	AR	Auto Regressive
	ARMA	Autoregressive Moving Average
	ARX	Autoregressive model with an Exogenous Input
	ASHA	American Speech Hearing Association
	BAEP	Brainstem Auditory Evoked Potential
	BFF	Box-eounting Fractal Feature
	BP	Backpropagation
	BM CA DFA DFFF EEG	Box-counting Method
	CA	Classification Accuracy
	DFA O	Detrended Fluctuation Analysis
	DFFF	Detrended Fluctuation Fractal Feature
	EEG	Electroencephalography
	ENN	Elman Neural Network
	EP	Evoked Potential
\bigcirc	ERP	Event Related Potentials
	FD	Fractal Dimension
	FFT	Fast Fourier Transform
	HTR	Hearing Threshold Response
	HPR	Hearing Perception Response
	HFF	Higuchi Fractal Feature
	HM	Higuchi Method
	HL	Hearing-threshold Lower
	HU	Hearing-threshold Upper
	HPL	Hearing Perception Level
	ISEF	Independent Spectral Energy Feature

	ISENF	Independent Spectral Entropy Feature
	ISEENF	Independent Spectral Energy Entropy Feature
	ISI	Inter Stimulus Interval
	ICA	Individual Classification Accuracy
	LLAEP	Long Latency Auditory Evoked Potential
	MFNN	Multilayer Feedforward Neural Network
	MLAEP	Middle Latency Auditory Evoked Potential
	MMN	Mismatch Negativity
	MA	Moving Average
	NHG	Normal Hearing Group
	NHS	Normal Hearing Subject
	NN	Neural Network
	PSO	Particle Swarm Optimization
	PSONN	Particle Swarm Optimization Neural Network
	SBC	Spectral Band Combination
	SBCEF	Spectral Band Combination Energy Feature
	SBCENF	Spectral Band Combination Entropy Feature
	SBCEF SBCENF SD SPL SNR	Spectral Band Combination Energy Entropy Feature
	SD 5	Standard Deviation
	SPL	Sound Pressure Level
	SNR	Signal to Noise Ratio
	STFT	Short Time Fourier Transform
\bigcirc	TEAOE	Transient Evoked Oto-acoustic Emissions
	VEP	Visually Evoked Potentials
	WT	Wavelet Transform

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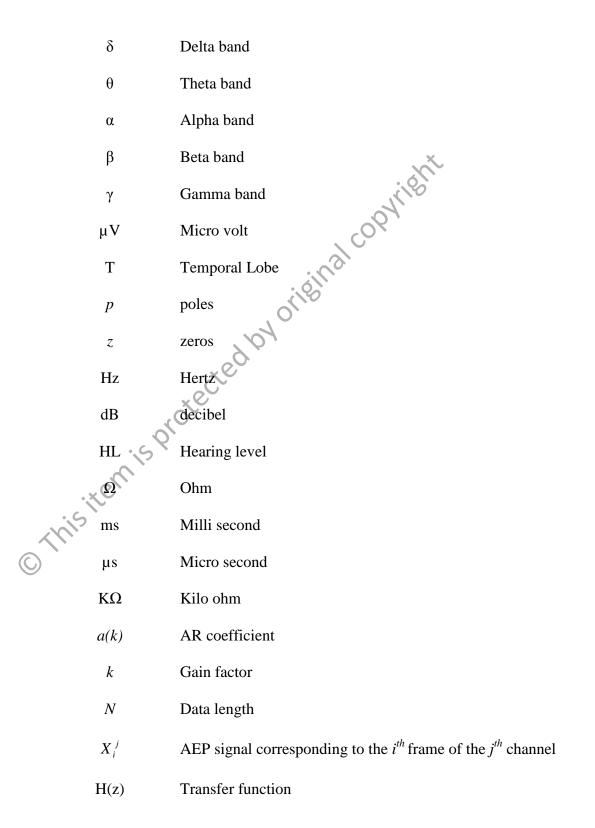
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LIST OF SYMBOLS



Xn_i^c	Normalized data value
X_i^c	data to be normalized
X_{\min}	Minimum value
$X_{ m max}$	Maximum value
d(z)	Characteristic equation
<i>p</i> , <i>q</i>	real roots, pair of complex roots
$M_{ m max}$, $M_{ m min}$	Maximum and Minimum magnitude of the roots
H_u, H_l	Upper and Lower hearing threshold factors
X_{i}	<i>i</i> th Swarm particle
V_i	Velocity of <i>i</i> th swarm particle
P_i	Best previous location of i^{th} swarm particle
P _g	Best global location of i^{th} swarm particle
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P _s spr	

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